C.U.SHAH UNIVERSITY
Summer Examination-2015

Subject Name: Microcontroller & Interfacing

Subject Code: 4TE04MCI1   **Branch: B.Tech (EEE,EE,IC)**

Semester: 4   **Date: 12/05/2016**   **Time: 2:30 To 5:30**   **Marks: 70**

Instructions:
   (1) Use of Programmable calculator & any other electronic instrument is prohibited.
   (2) Instructions written on main answer book are strictly to be obeyed.
   (3) Draw neat diagrams and figures (if necessary) at right places.
   (4) Assume suitable data if needed.

Q-1   **Attempt the following questions:**   **(14)**

   a) How many Bits can be processed simultaneously in the 8085?
   (A)4**(B)** 2**(C)** 8**(D)**16

   b) How many interrupts are there in the 8085?
   (A)4   **(B)** 2   **(C)** 3**(D)** 5

   c) What is the size of internal ROM in 8085?
   (A)0 GB**(B)**128 BYTE**(C)** 4 KB**(D)** 64 KB

   d) Which register pair is used as data pointer in the 8085?
   (A) AB**(B)**BC**(C)** DE**(D)** HL

   e) 8085 Microprocessor is based on_____ Architecture?
   (A) Von-Neumann**(B)**Harvard**(C)**Oxford**(D)** None of the above

   f) The size of accumulator in 8051 is _____ bits.
   (A)4   **(B)** 8**(C)**10**(D)** 16

   g) What is size of internal RAM in the 8051?
   (A)4MB**(B)** 4KB**(C)**0 GB**(D)**128 BYTE

   h) How many parallel I/O ports are there in the 8051?
   (A)1**(B)** 2   **(C)** 3**(D)**4

   i) The number of timers in the 8051 is _____.
   (A)4   **(B)** 2   **(C)** 8   **(D)**3

   j) _____is default register bank.
   (A)BANK-3**(B)**BANK-2**(C)** BANK-1**(D)**BANK-0

   k) How many serial ports are there in the 8051?
   (A)4   **(B)** 2   **(C)** 1 **(D)**8

   l) The instruction used in 8051 to interchange the nibbles of Accumulator is _____.
   (A)MOV**(B)**INX**(C)**XCH**(D)**SWAP

m) After division operation in 8051, reminder is stored in the _____.
(**A**)Accumulator(**B**)B Register(**C**)PSW(**D**) Register bank

n) What is the bit pattern of Accumulator after execution of **MOV A, # - 128**?
(**A**)1 1 0 0 1 1 0 0(**B**) 1 1 0 0 1 1 1 1(**C**)1 0 0 0 0 0 0 0(**D**)0 1 1 1 1 1 1 1

Attempt any four questions from Q-2 to Q-8

Q-2	**Attempt all questions**	**(14)**
a)	Draw the block diagram of 8085 microprocessor and explain each block in detail.	
b)	Write a note on Addressing Modes of 8051	

Q-3	**Attempt all questions**	**(14)**
a)	Draw and explain Memory Map of 8051.	
b)	Write a Program to Add two Words.	

Q-4	**Attempt all questions**	**(14)**
a)	Explain PSW register of 8051 in detail.	
b)	Differentiate between Microprocessor and Microcontroller.	

Q-5	**Attempt all questions**	**(14)**
a)	Write a note on interrupts of 8051.	
b)	Write a program to arrange 10 Data Array in descending order stored in external memory location staring from 6000h to 6009h.	

Q-6	**Attempt all questions**	**(14)**
a)	Draw and explain functional diagram of 8051.	
b)	Write a program to generate square wave of on P1.0 of 1kHz. (XTAL=22MHz)	

Q-7	**Attempt all questions**	**(14)**
a)	Draw and explain Internal Port Structure of 8051.	
b)	Write a program to convert Decimal number placed in external memory location 7000h to hexadecimal and store the result into R0 .	

Q-8	**Attempt all questions**	**(14)**
a)	Explain the interfacing of LCD with 8051 with necessary schematics and code for the interfacing?	
b)	What is assembler directive? Explain any two assembly directives..	